

between the filaments composing the ordinary cellular tissue, he considers as being fatty matter deposited within these spaces. He, in like manner, regards the observations tending to show the cellular origin of the fibrous, cartilaginous, and osseous tissues, as altogether fallacious; and maintains that the cells, which these animal textures exhibit when viewed under the microscope, are simply spaces occurring in the more solid substance of these structures, like the cavities which exist in bread. These views are pursued by the author in discussing the formation of the skin, the blood-vessels, and the nerves, and in controverting the theory of secretion, founded on the action of the interior surfaces of the membranes constituting cells.

“On the Organ of Hearing in Crustacea.” By Arthur Farre, M.D., F.R.S.

The author finds that in the Lobster (*Astacus marinus*), the organ of hearing consists of a transparent and delicate vestibular sac, which is contained in the base, or first joint of the small antennæ; its situation being indicated externally by a slight dilatation of the joint at this part, and also by the presence of a membrane covering an oval aperture, which is the fenestra ovalis. The inner surface of the sac gives origin to a number of hollow processes, which are covered with minute hairs and filled with granular matter, apparently nervous. A delicate plexus of nerves, formed by the acoustic nerve, which is a separate branch supplied from the supra-œsophageal ganglion, is distributed over the base of these processes and around the sac. Within the sac there are always found a number of particles of siliceous sand, which are admitted, together with a portion of the surrounding water, through a valvular orifice at the mouth of the sac, being there placed apparently for the express purpose of regulating the size of the grains. The author considers these siliceous particles as performing the office of otolites, in the same way as the stones taken into the stomachs of granivorous birds supply the office of gastric teeth. Several modifications of this structure exhibited in the organs of hearing of the *Astacus fluviatilis*, *Pagurus streblonyx*, and *Palinurus quadricornis* are next described, and an explanation attempted of the uses of the several parts and their subserviency to the purposes of that sense.

The author concludes by a description of another organ situated at the base of the large antennæ, which it appears has been confounded with the former by some anatomists, but which the author conjectures may possibly constitute an organ of smell. The paper is accompanied by illustrative drawings.

MISCELLANEOUS.

ADDENDA AND EMENDATIONS TO MR. E. BLYTH'S LIST OF BIRDS OBTAINED IN THE VICINITY OF CALCUTTA.

To Richard Taylor, Esq.

Calcutta, May 12, 1843.

MY DEAR SIR,—The last month has been a very productive one to me, in various classes of animals, and among the rest in that of

birds; hence I am enabled to rectify one or two matters of nomenclature in the paper which I sent you by last month's mail, and to add some more species to the catalogue.

First, for *Ichthyaëtus cultrungius* you must substitute *Haliaëtus blagrus*, of which the former is merely the young, and place this species next to *Haliaëtus Macei*. Put it thus—

[*H. blagrus*. The young of this species I described as new by the appellation *Ichthyaëtus cultrungius* (Journ. As. Soc. Beng. xi. 110). It is not uncommon along the river.] And add—

[*Ichthyaëtus Horsfieldi*; *Falco ichthyaëtus*, Horsfield; *Haliaëtus plumbeus*, Hodgson. Not rare upon the river. The mottled first plumage of the young much resembles the corresponding garb of *Milvus cheele*.]

Add, as a note, to *Gallinula chloropus*?—

[Since writing the above I have been favoured with a loan of the true *G. chloropus*, which I recognised as such at a glance, from the Mauritius; and the Indian species is certainly distinct, being characterized, in addition to its inferior size, by having the frontal shield much less developed, at all ages. It may be termed, therefore, *G. parvifrons*.—E. B.] Add also,—

[*Phyllopeuste trochilus*? This would seem to be distinguished from the British species by the darker colour of the head, and ashy tinge of the lower parts; also, I think, by the colour of the legs and size and form of the bill; moreover the *shikaree* who shot it informed me that it sung prettily, and on my imitating the well-remembered note of *Ph. trochilus*, he assured me that the song of this bird was quite different. I shall describe it together with about a dozen other species of this well-defined group.]

[*Sterna (Anoüs) tenuirostris*, nobis. Distinguished from *St. stolidus* by its considerably inferior size, much more slender bill, and deeper and consequently more vividly contrasted colours of its plumage. A single specimen was brought fresh to Dr. McClelland, shot in the neighbourhood, which that naturalist has kindly presented to the Society.]

[*Gallus Bankivus*. I have received a specimen of this bird shot at about forty miles from Calcutta.]

[*Malaconotus* —? Distinct from all those noticed in Mr. Jerdon's catalogue under the generic head *Timalia*, and also from a new species from Western India (*M. Burvedii*, nobis), but which I think is figured in one of Buchanan Hamilton's drawings, though I have been unable to spare time to visit the Botanic Garden to consult them. Shot near Calcutta.]

The following synonyms may be attached to certain other species:—

To *Rhipidura fuscoventris*,—*Muscicapa (Muscylva) albogularis*, Lesson.

To *Tephrodornis superciliosus*,—*Lanius sordidus*, Lesson.

To *Cuculus niger*, add—Distinct from the Malayan *C. flavus*? and the Australian *C. cinerea*. According to Lesson, *C. flavus* extends both to India and Australia.

I remain, yours very truly,

E. BLYTH.

Calcutta, June 7, 1843.

MY DEAR SIR,—The inclosed was to have been sent by last month's *express*, but owing to the weight (of letters) being made up about three hours before the usual time, it and numerous other letters were returned. It will now arrive, I fear, too late to be of service, but I will nevertheless send the following addenda and emendations, at a venture. *Ninox lugubris* is the *Strix scutulata*, Raffles, or *Str. hirsuta*, Temminck.—To *Athene brama* add *Noctua Tarayensis*, Hodgson, as a synonym.—After *Acrocephalus montanus* put No. 90 a., a species nearly allied to the last, but smaller and more rufous, and which has recently been also obtained by Mr. Jerdon at Nellore, about 100 miles to the northward of Madras (*Nellore*, not *Vellore*). *Charadrius rufinus* is, I am now tolerably sure, the *Ch. Geoffroyi*, Lesson; and I have much reason to suspect that *Ch. rufinellus* is the *Ch. Leschenaultii* of the French.—I am happy to say I continue in good health, and overwhelmingly busy; and with kind remembrances, believe me to remain, my dear Sir, yours most truly,

E. BLYTH.

[As these letters reached us too late for the addenda to be inserted along with the paper, we have preferred printing them without alteration from the author's MSS. letters.—ED.]

METEOROLOGICAL OBSERVATIONS FOR JULY 1843.

Chiswick.—July 1. Overcast: clear. 2. Overcast throughout. 3. Fine. 4. Uniform haze: very fine. 5. Sultry: very hot. 6, 7. Cloudy and fine. 8. Cloudy: rain: clear. 9. Foggy: very fine. 10. Cloudy and fine. 11. Thickly overcast. 12. Very fine. 13. Light haze: rain. 14. Densely overcast: very fine. 15—17. Very fine. 18. Very fine: constant heavy rain after 3 P.M. 19. Cloudless in the morning: cloudy at noon: clear. 20. Very fine: slight rain: overcast: rain at night. 21. Cloudy and fine. 22. Rain. 23. Cloudy and squally: cold rain. 24. Clear: cloudy and fine: clear. 25. Overcast and fine: clear. 26. Overcast: slight rain. 27. Showery. 28. Cloudy and fine: rain. 29. Very fine. 30. Cloudy and fine: clear. 31. Hazy: cloudy and fine: clear.—Mean temperature of the month 1°·3 below the average.

Boston.—July 1. Fine. 2. Fine: rain early A.M. 3. Windy. 4. Fine. 5. Cloudy: heat 81°·5 4 o'clock P.M. 6. Windy: rain early A.M. 7. Fine: thunder-storm 5 P.M.: rainbow 6 P.M. 8. Rain: rain early A.M.: rain P.M. 9. Fine. 10. Cloudy. 11. Cloudy: rain P.M. 12. Fine: rain P.M. 13, 14. Cloudy: rain early A.M. 15, 16. Fine. 17. Cloudy. 18. Windy: rain P.M. 19. Fine. 20. Fine: rain P.M. 21. Fine. 22. Cloudy: rain P.M. 23. Windy: rain P.M. 24, 25. Fine. 26. Cloudy. 27. Windy: rain early A.M. 28. Cloudy. 29. Cloudy: rain early A.M. 30. Cloudy: rain P.M. 31. Fine: rain, with thunder and lightning P.M.

Sandwick Manse, Orkney.—July 1. Bright: rain. 2. Drizzle. 3. Bright: cloudy. 4. Bright: shower. 5. Bright: damp. 6. Thunder: fog: cloudy. 7. Bright: cloudy. 8—10. Bright: clear. 11. Clear. 12. Cloudy: damp. 13. Damp: cloudy. 14. Cloudy. 15, 16. Shower: cloudy. 17. Bright: cloudy. 18, 19. Showery. 20. Rain: cloudy. 21. Bright: clear. 22. Bright: cloudy. 23. Cloudy. 24. Bright: clear. 25. Bright: cloudy. 26. Cloudy: showers. 27. Showers: cloudy. 28. Bright: cloudy. 29. Cloudy: rain. 30, 31. Damp: drizzle.

Meteorological Observations made at the Apartments of the Royal Society, LONDON, by the Assistant Secretary, Mr. Robertson; by Mr. Thompson at the Garden of the Horticultural Society at CHISWICK, near London; by Mr. Veall, at BOSTON; by the Rev. W. Dunbar, at Applegarth Manse, DUMFRIES-SHIRE; and by the Rev. C. Clouston, at Sandwick Manse, ORKNEY.

Days of Month.	Barometer.				Thermometer.				Wind.				Rain.										
	London: Hoy. Soc. g a.m.		Chiswick.		Boston. g a.m.		Dumfries-shire.		Orkney, Sandwick.		London: R.S. Self-reg. g a.m.		Chiswick.		Boston.		Dumfries-shire.		Orkney, Sandwick.				
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.			
1843.																							
July.																							
1.	30.038	30.002	29.982	29.962	29.44	29.76	29.56	64.3	74.3	54.0	69	52	63.5	54.4	52	w.	e.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
2.	30.018	29.985	29.964	29.941	29.31	29.53	29.52	69.8	60.0	56.0	73	58	66	59.4	57	s.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
3.	30.036	29.975	29.957	29.937	29.42	29.80	29.63	65.8	80.3	60.8	76	59	69	62	57	s.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
4.	30.040	29.975	29.958	29.938	29.42	29.83	29.67	69.7	81.0	58.8	78	53	66	55	54	n.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
5.	29.998	29.971	29.953	29.933	29.13	29.85	29.73	77.8	81.0	60.3	88	55	65	61	57	se.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
6.	29.982	29.915	29.761	29.741	29.13	29.83	29.63	64.4	85.6	59.0	73	51	61	58	54	se.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
7.	30.014	29.945	29.913	29.893	29.32	29.84	29.90	64.4	84.6	56.8	68	53	63.5	58	55	sw.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
8.	30.040	29.941	29.876	29.856	29.37	29.98	30.12	61.8	69.3	56.6	62	45	59	55	53	e.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
9.	30.018	29.977	29.954	29.934	29.46	30.15	30.17	58.4	65.7	51.6	73	47	67	57	55	n.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
10.	30.018	29.954	29.935	29.915	29.44	30.17	30.20	64.7	74.5	55.0	60	55	60	56	54	nw.	n.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
11.	30.060	30.106	30.069	30.054	29.54	30.24	30.24	58.3	70.3	56.2	62	52	57	56	54	nw.	n.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
12.	30.236	30.147	30.085	29.969	29.54	30.06	30.04	61.3	65.2	54.0	77	56	63	62	59	nw.	n.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
13.	30.100	30.040	30.022	29.950	29.50	30.07	30.07	66.7	76.2	60.0	67	54	60.5	58	57	sw.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
14.	30.130	30.059	30.048	29.968	29.56	29.82	29.93	67.2	70.5	56.7	76	53	67	58	57	nw.	n.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
15.	30.136	30.117	30.048	29.948	29.48	29.82	29.98	69.7	88.3	57.3	77	56	67	55	54	sw.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
16.	30.168	30.234	30.143	30.061	29.50	29.95	30.04	66.4	76.4	61.2	80	58	64.5	56	53	w.	w.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
17.	30.318	30.249	30.143	30.050	29.26	29.97	29.67	66.8	80.8	61.2	75	49	66.5	55	53	w.	w.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
18.	30.086	29.975	29.784	29.764	29.26	29.72	29.64	61.7	76.0	53.0	68	44	63	59	52	w.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
19.	29.822	29.753	29.709	29.690	29.26	29.70	29.64	61.7	71.2	50.3	67	54	59	56	50	w.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
20.	29.838	29.756	29.696	29.676	29.22	29.44	29.47	58.7	71.2	50.3	67	54	59	56	50	w.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
21.	29.798	29.808	29.682	29.612	29.25	29.54	29.73	63.3	67.3	57.2	60	55	62	51	52	w.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
22.	29.862	29.818	29.682	29.612	29.25	29.67	29.51	64.9	70.6	55.8	65	52	60	56	50	w.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
23.	29.816	29.781	29.643	29.573	29.25	29.99	30.11	68.8	64.4	48.6	64	40	59	52	50	w.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
24.	30.088	30.128	30.016	29.946	29.52	29.99	30.11	68.8	64.4	48.6	65	42	58.5	52	50	w.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
25.	30.246	30.221	30.176	30.068	29.68	30.15	30.15	57.9	65.3	50.6	72	47	62	63	53	w.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
26.	30.304	30.249	30.171	30.070	29.70	29.89	29.88	66.2	67.8	55.0	72	56	67	68	54	w.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
27.	30.104	30.053	29.995	29.955	29.43	29.84	29.94	69.8	74.2	59.0	74	54	65	54	54	w.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
28.	30.090	30.002	29.955	29.947	29.43	29.92	29.69	61.9	70.4	57.8	73	58	60	55	53	w.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
29.	29.806	29.759	29.634	29.584	29.13	29.43	29.41	65.2	74.3	58.2	71	53	64	59	52	sw.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
30.	29.702	29.676	29.636	29.606	29.06	29.54	29.70	69.7	79.4	56.4	71	49	58	55	51	sw.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
31.	29.572	29.959	29.792	29.702	29.27	29.77	29.74	60.6	70.6	54.0	69	47	61	52	51	w.	sw.	London: R.S. g a.m.	London: g a.m.	Chiswick.	Dumfries-shire.	Orkney, Sandwick.	
Mean.	29.998	29.978	29.892	29.802	29.37	29.819	29.836	68.1	79.5	56.5	71.64	52.06	62.7	55.83	52.79			Sum.	2.347	1.67	2.40		

The Meteorological Observations from Applegarth Manse, Dumfries-shire, for July, have not yet been received.